L 62767-65

ACCESSION NR: AP5018091

The observed dependence of the discoloration on the temperature of irradiation can be explained by the shift of the dynamic equilibrium between the formed and decaying color centers. It is assumed that the number of F-centers formed decreases with decreasing temperature, while the radiation destruction of these centers does not depend on the temperature. The constant $P_c$ after low doses of irradiation can be explained by a decrease in the effect of radiation annealing due to the diminishing number of color centers and an increase in their stability. Orig. art. has: 2 tables.

][BN]

ASSOCIATION: none

SUBMITTED: 07Dec64 ENCL: 02 SUB CODE: MT, NP

NO REF SOV: 001 OTHER: 008 ATD PRESS: 4056

Card 2/4

L 62767-65

ACCESSION NR: AP5018091

ENCLOSURE: 01

Table 1. ORS at room temperature

| Irradiation dose, r ($Co^{60}$) | KI glass *T,% | $P_c$ | KRL glass T,% | $P_c$ |
|---|---|---|---|---|
| Initial | 92 | — | 92 | — |
| $10^4$ | 87 | 0.95 | 92 | 1 |
| $10^5$ | 40 | 0.43 | 92 | 1 |
| $10^6$ | 2 | 0.02 | 92 | 1 |
| $10^7$ | 0 | 0 | 92 | 1 |

*) T - Light transmission measured on IF-16 device.

Card 3/4

L 62767-65

ENCLOSURE: 02

ACCESSION NR: AP5018091

Table 2. ORS at low temperatures

| Irradiation temperature, °K | KI glass, dose $10^4$r | | KI glass, dose $10^6$r | | KRL glass, dose $10^6$r | |
|---|---|---|---|---|---|---|
| | T, % | $P_c$ | T, % | $P_c$ | T, % | $P_c$ |
| 90 | 87 | 0.95 | 68 | 0.74 | 91 | 1 |
| 200 | 88 | 0.95 | 21 | 0.2 | 91 | 1 |
| 300 | 87 | 0.95 | 2 | 0.02 | 92 | 1 |

Card 4/4

L 53801-65 EWG(j)/EWT(l)/EWP(e)/EWT(m)/EWP(i)/EEC(b)-2/T/EWP(b)/EWA(h)/
EWA(l) Pz-4/Peb/Pi-4 IJP(c) GG/WH UR/0368/65/002/004/0374/0376

ACCESSION NR: AP5013865

37
B

AUTHOR: Brekhovskikh, S. M.; Landa, L. M.

TITLE: Radiation optical stability of quartz glass

SOURCE: Zhurnal prikladnoy spektroskopii, v. 2, no. 4, 1965, 374-276

TOPIC TAGS: optical glass, quartz glass, radiation endurance, optical stability, color center, discoloring

ABSTRACT: The authors investigated the effect of γ radiation and protons on the optical transmission of two brands of quartz glass (KI and KV), in view of the fact that in many optical investigations quartz glass is the only suitable material. The KV contains far fewer impurities than KI. Both glasses were exposed to γ rays from $Co^{60}$ with exposure doses of $10^4$, $10^5$, $10^6$, and $10^7$ r and with ~ 1.75 x $10^{13}$, 2 x $10^{14}$, and $10^{15}$ protons of energy 4.8 x $10^6$ eV in the cyclotron of the Tomsk Polytechnic Institute. The light transmission of the samples was measured with the SF-10 instrument in the visible part of the spectrum, SF-4 in the ultraviolet, and IF-16 for the integral light transmission at wavelength 0.55 μ. The KV glass did not

Card 1/2

L 53801-65
ACCESSION NR: AP5013865

change its transmission even at a $10^7$ r dose, whereas the KI became completely opaque at that dose. A similar situation arises following proton bombardment. The endurance of the glass varies with the wavelength of the light. The results are interpreted from the point of view of discoloring and coloring action of the radiation at different wavelengths, and the difference in the color centers produced by the various impurities in the glass. Orig. art. has: 4 figures. [02]

ASSOCIATION: None

SUBMITTED: 17Sep64 ENCL: 00 SUB CODE: OP

NO REF SOV: 002 OTHER: 000 ATD PRESS: 4022

Card 2/2

L 11846-66 EWT(m)/EPF(n)-2/EWP(e)/EWP(b) GG/WH/GS

ACC NR: AT6000506 SOURCE CODE: UR/0000/65/000/000/0365/0368

AUTHOR: Brekhovskikh, S. M.; Grinshteyn, Yu. L.; Landa, L. M.; Chubkina, N. I.

ORG: None

TITLE: The influence of nuclear radiation on the structure and phase transition in glassceramics

SOURCE: Vsesoyuznoye soveshchaniye po stekloobraznomu sostoyaniyu. 4th, Leningrad, 1964. Stekloobraznoye sostoyaniye (Vitreous state); trudy soveshchaniya, Leningrad, Izd-vo Nauka, 1965, 365-368

TOPIC TAGS: irradiation effect, crystallization, ceramics, nuclear radiation, ionizing radiation, glass product, gamma ray, neutron

ABSTRACT: Glassceramics, representing a mixture of at least two phases, one of which is metastable, is quite susceptible to induced crystallization under the influence of ionizing radiation. The authors investigated $Li_2O$-$Al_2O_3$-$SiO_2$ systems with a composition close to spondumene crystallized at 710°. Transparent samples were irradiated by $10^2$ to $10^5$ rad doses of $^{60}Co$ $\gamma$-rays and by $10^{16}$ to $10^{19}$ neutr/cm$^2$ of thermal neutrons. Results are in the form of x-ray ionization curves with the curves of nonirradiated $\beta$-eucryptite or eucryptite-like solid solution serving as the standard. Results show that whereas gamma rays cause an

Card 1/2

LANDA, L.I.

Ultrasonic generator for medical purposes. Trudy Kish.gos.med. inst. 13:37-40 '60. (MIRA 16:2)

1. Kafedra fiziki Kishinevskogo gosudarstvennogo meditsinskogo instituta.

(ULTRASONIC WAVES--THERAPEUTIC USE)

LANDA, L. N.

LANDA, L. N.--"Concerning the Psychology of the Formation of Reasoning Methods." (From Material on Methods of Students of the VII and VIII Classes in Solving Problems in Geometric Proofs)."* (Dissertation for Degree in Science and Engineering Defended at USSR Higher Education Institutions.) Acad of Pedagogical Sci RSFSR, Inst of Psychology, Moscow, 1955

SO: Knizhnaya Letopis', No. 25, 18 Jun 1955

* For Degree of Candidate in Pedagogical Sciences

LANDA L.

PALEY, I.M.; LANDA, L.N.

Solving psychology problems in laboratory work. Vop. psikhol. 4 no.1: 170-174 Ja-F '58. (MIRA 11:3)

1. Kafedra pedagogiki i psikhologii Permskogo pedagogicheskogo instituta i Institut teorii i istorii pedagogiki APN RSFSR.
(Psychology--Study and teaching)

LANDA, L.N.

Formation among pupils of a general method of thinking for the solution of problems. Vop. psikhol. 5 no.3:14-27 My-Je '59. (MIRA 12:9)

1.Institut teorii i istorii pedagogiki Akademii pedagogicheskikh nauk RSFSR.
(Learning, Psychology of)
(Geometry--Study and teaching)

LANDA, L.N.

Training of pupils in methods of rational thought and the problem of algorithms. Vop.psikhol. 7 no.1:103-118 Ja-F '61. (MIRA 14:3)

1. Institut teorii i istorii pedagogiki Akademii pedagogicheskikh nauk RSFSR, Moskva.
(Education of children)
(Thought and thinking)

LANDA, L.N.

Teaching students for rational thinking methods and the problems of algorithms. Magy pszichol szemle 19 no.2:150-165 '62.

1. OSZSZSZK Nevelestudomanyi Akadémiajanak Neveleselmeleti es Nevelestorteneti Intezete, Moszkva.

LANDA, L.N. (Moskva)

Algorithmic approach to the analysis of teaching processes to legitimate. Vop. psikhol no.4:143-152 Jl-Ag '63. (MIRA 17:1)

HUNGARY

LANDA, L.N., of the Institute for Education Theory and Education History at the Academy for the Educational Sciences of the Russian SSR [original-language version not given], Moscow.

"Application of Mathematical Logic and Information Theory in Selected Educational Problems"

Budapest, Magyar Pszichologiai Szemle, Vol 20, No 1, 1963, pp. 76-98.

Abstract: A method was described for the construction of logical algorithms, based on an analysis of the logical structure of the curriculum and of the information-theoretical characteristics of the subject to be imparted. These models were applied to the mechanics of teaching taking into consideration the requirements of pedagogy and psychology. Ten references, including 6 Russian, 1 German, and 3 Western. [Translated from the Russian by BARAT, Janos].

1/1

LANDA, L. N.

"Algoritmizatsiya v obuchenii."

report submitted for 15th Intl Cong, Intl Assn of Applied Psychology, Ljubljana, Yugoslavia, 2-8 Aug 1964.

Institut psikhologii, Moskva.

L 23823-65 EWT(d)/T Pn-4 IJP(c)

ACCESSION NR: AR4046322 S/0044/64/000/008/V070/V070

SOURCE: Ref. zh. Matematika, Abs. 8V520

AUTHOR: Landa, L. N.

TITLE: The problem of mathematical methods for constructing and estimating algorhythms of recognition

Algorithms

CITED SOURCE: Izv. Akad. ped. nauk RSFSR, vy*p. 129, 1963, 117-124

TOPIC TAGS: computer, classification, recognition program, computer mathematics, disjunctive link, conjunctive link, minimum time expenditure, verification order, inequality

TRANSLATION: The following problem is examined: to classify some article, verification has to be made whether it has the signs $A_1, \ldots, A_n$, i.e. a) anyone of the signs $A_1, \ldots, A_n$ (disjunctive link of signs) or b) all the signs $A_1, \ldots, A_n$ (conjunctive link of signs). It is assumed that the signs $A_1, \ldots, A_n$ are independent of the population and that the probabilities $p_i = P(A_i)$ of whether the article has the

Card 1/2

ACCESSION NR: AR4046322

sign $A_i$. It is asked in which order the signs $A_i$ should be checked so as to expend a minimum average time for classification of the article. In the case of disjunctive link of the $A_i$ sign, checking in the series $A_{j1} \ldots A_{jn}$ should proceed such that

$$\frac{p_{j1}}{t_{j1}} > \frac{p_{j2}}{t_{j2}} > \ldots > \frac{p_{jn}}{t_{jn}}.$$

In the conjunctive case, the inequalities should point the other way. Reviewer's remarks: The work does not contain proof of these simple assertions. Besides, the author has apparently failed to consider that the disjunctive and conjunctive case are obtained from one another by negative operation, which also supplies the confirmation on the change of the inequality sign. V. Tutubalin.

SUB CODE: MA ENCL: 00

LANDA, L.Ye., inzh.; BUKHALKIN, Yu.M., inzh.

Characteristics of the power plant on the tank vessel "Dzhuzeppe Garibaldi." Sudostroenie 29 no.1:30-38 Ja '63. (MIRA 16:3)
(Tank vessels) (Marine gas turbines) (Boilers, Marine)

LANDA, L.Ye., inzh.-teplotekhnik

Power plant on the tank vessel "Mir". Biul. tekh.-ekon. inform. Tekh. upr. Min. mor. flota 7 no.6:38-56 '62. (MIRA 16:4)

1. Chernomorskoye parpkhodstvo. (Tank vessels) (Marine boilers)

ACC NR: AR6028519 (N) SOURCE CODE: UR/0398/66/000/005/V017/V017

AUTHOR: Rozhdestvenskiy, N. A.; Landa, L. Ye.

TITLE: Results of main propulsion installation tests aboard the tanker Sofiya on its first operational voyage

SOURCE: Ref. zh. Vodnyy transport, Abs. 5V77

REF SOURCE: Inform. sb. Tsentr. n.-i. in-t morsk. flota, no. 37 (140), 1965, 29-70

TOPIC TAGS: propulsion engineering, propulsion performance, propulsion system test, ocean transportation, ship component, cargo ship, steam turbine, turbine engine, ~~propulsion research facility~~, system reliability, mechanical power transmission device

ABSTRACT: The type TS-2 GTZA [main geared-turbine unit] installed in the ships differs from the GTZA in ships of the Pekin class in the systems used to regulate, control, and protect the unit. The tests conducted by a brigade from the TsNIIMF [Central Scientific-Research Institute for the Merchant Marine] and the ChMP [Black Sea Steamship Company] revealed that the steam turbine installation has good economic and operational indices. Some faults appeared in the GTZA remote control system for the maneuvering valves. Inadequate reliability of equipment and mechanisms, and the great number of different types and sizes of marine mechanisms and equipments used in Soviet steam turbine installations is commented on. The steam system for the ship's installation is diagrammed. 12 figures, 6 tables. [Translation of abstract]

SUB CODE: 13 UDC: 621.125:678.016

Card 1/1

LANDA, M.

"Development of a dry method in the production of viscose fiber."
Chemicky Prumysl, Praha, Vol 4, No 5, May 1954, p. 167

SO: Eastern European Accessions List, Vol 3, No 10, Oct 1954, Lib. of Congress

UR 0229-67 WVH/FDN
ACC NR: AP6024015 (N) SOURCE CODE: UR/0229/66/000/003/0018/0022

AUTHOR: Landa, L. Ye.

ORG: None

TITLE: The use of steam turbine units on transport ships

SOURCE: Sudostroyeniye, no. 3, 1966, 18-22

TOPIC TAGS: steam turbine, ocean transport, marine engine

ABSTRACT: Operational data are given for steam turbine marine power units of 19,000 hp operating on the Black Sea. These units function at steam pressures of 32-47 kg/cm$^2$ and temperatures of 400-470°C. The work output of boilers, heat exchangers and auxiliary equipment has increased along with fuel consumption, e. g. 115 tons per day for "Praga" and "Sofiya" type ships, 80 tons per day for "Leninskiy Komsomol", 90 tons per day for "Mir" and "Druzhba" and 80 tons per day for "Trud". The level of automation has also increased. The technical economic indices of these ships are quite different despite the similarity between the parameters of the power systems and equipment. Tables are given showing the relationship between fuel expenditure in terms of both weight and cost per productive ton-mile, for turbine and diesel ships. All data were collected and computed with respect to actual operating conditions on the basis of 1000 ton-miles. Analysis of these data shows that operational fuel expenditure per

Card 1/2

UDC: 621.125.004

Card 2/2

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their Application. Corrosion. Corrosion Control H-4

Abs Jour : Ref Zhur - Khim., No 24, 1958, No 81954

Author : Landa M.
Inst :
Title : Corrosion of Nuclear Reactors, Cooled by Water Under Pressure.

Orig Pub : Nova techn., 1958, No 4, 162

Abstract : It has been established that under intensive -radiation the $H_2O \rightleftarrows 2H^+ + O^{2-}$ reaction is shifted to the right with liberated $O_2$ causing severe corrosion. Hydrazine is recommended as the corrosion inhibitor. It is pointed out that the best material of construction for the primary heat exchangers is the Lircalloy 2 (sic) whose composition (in %) is: 1.5 Sn, 0.12 Fe, 0.1 Cr, 0.05 Ni, < 0.005 Al, < 0.006 N, < 0.005 Ti, and the balance r. -- M. Mel'nikova

Card : 1/1

Z/020/60/000/008/025/041
A205/A026

AUTHORS: Landa, M.; Schnabel, B.; - Doctors of Engineering

TITLE: Improvement of Turbine Oil Quality - A Way to Greater Economy

PERIODICAL: Energetika, 1960, No. 8, pp. 435 - 436

TEXT: The authors stress the significance of turbine oil quality for proper operation of steam turbines. Turbine oils are not only used for lubrication but also for heat deduction from bearings, tightening of hydrogen cooling systems, etc. Such high-quality oils were primarily imported to the CSR but are now produced by domestic refineries. Refineries "OSTRAMO", National Enterprise in Ostrava and "PARAMO", National Enterprise in Pardubice and the "Výzkumný ústav pro chemické využití uhlí" (Research Institute for Chemical Exploitation of Coal) at the "Stalinovy závody", National Enterprise in Záluží are engaging in research on quality improvement of turbine oils. The research in this field is based on the experience that catalytic hydrogenating refining is more suitable for sulfurous compound separation from sulfurous crude oil than classical refining processes. For a wider discussion of this problem, a "Day of New Engineering" Information Course was held at the "Stalinovy závody" on March 15, 1960, organized

Card 1/3

Z/020/60/000/008/025/041
A205/A026

Improvement of Turbine Oil Quality - A Way to Greater Economy

by the "Stalinovy závody" Plant Branch of the VTS (Scientific Technical Society) and the Prague Municipal Commission of the VTS, Section for Lubrication Engineering. The course was attended by nearly 1,000 delegates of power plants, oil refineries, mechanical engineering plants, research institutes, chemical plants and various authorities. The following is a detailed list of delivered reports: Engineer Ctirad Náhlovský of the "Benzina" National Enterprise spoke about turbine oils used in Czechoslovak steam turbines. Engineer Václav Mašek of the "OSTRAMO" National Enterprise reported on problems of turbine oil testing and production. Engineer Stehlík of the "První brněnská strojírna", National Enterprise, reported on demands imposed on turbine oil quality by producers and maintenance service men of steam turbines. Kulhánek, technologist of the machine maintenance shop at the power plant of the "Stalinovy závody" reported on the successful cooperation of the "Chema" and "Benzina" enterprises in testing new turbine oil types with and without additives. He mentioned an oil pipe cleaning method with a pressure gun, developed by Prokop of the "Prvni brněnská strojírna". Dragoun of the "OSTRAMO" National Enterprise reported on rust preventing additives like "Santolub AR" and "Santolub 75" with addition of the anti-oxidant "Driverol".

Card 2/3

Z/009/60/010/02/012/026
E142/E235

AUTHOR: Landa, M

TITLE: Corrosion Protection of Materials

PERIODICAL: Chemický Průmysl, 1960, Vol 10, Nr 2, pp 88-89

ABSTRACT: The protection of chemical apparatus against corrosion was discussed during this meeting which was held in the Stalin Works in September, 1959. The following papers were read: Engineer J. Urban on "The Problem of Protection of Materials in the Stalin Works"; Engineer V. Číhal on "Materials Resistant to the Effect of High Pressure Hydrogen, Nitrogen, Synthesis Gas and Ammonia"; Engineer B. Doležel on "The Possible Uses of Plastic Materials in the Stalin Works"; Engineer M. Svoboda on "The Protection of Steel Constructions and Installations in Chemical Plants by Lacquers"; Engineer Dr G. Šebor on "The Use of Polychlorprene Latex for protecting equipment in Mines"; Engineer K. Sklenář on "Corrosion During Petroleum Processing at the Stalin Works."

ASSOCIATION: Stalinovy závody, n.p. (Stalin Works n.p.)

Card 1/1

LANDA, M.

"River banks protection against erosion." p. 49. (Ochrana Prirody. Vol. 8, no. 3, July 1953. Praha.)

SO: Monthly List of East European Accessions, Vol. 3, No. 2, Library of Congress, February 1954, Unc

LANDA, M.

Peace Vyzkumnych ustavu lesnickych CSR (The Work of Forest Research Institutes in Czechoslovakia); a book review. p. 60. OCHRANA PRIRODY. (Ministerstvo kultury. Statni pece o ochranu prirody) Praha.
Vol. 11, no. 2, Mar. 1956.

SOURCE: EEAL - LC Vol. 5 No. 10 Oct. 1956

LANDA, M.

K. Cermak's Lesnicky a myslivecky atlas ( Atlas of Forestry and Hunting); a review. p. 157.
OCHRANA PRIRODY. (Ministerstvo kultury. Statni pece o ochranu prirody) Praha.
Vol. 11, no. 5, June 1956

SOURCE: EEAL - LC Vol. 5 No. 10 Oct. 1956

LANDA, M.

S. Hanzlik's Zaklady meteorologie a klimatologvie (Principles of Meteorology and Climatology) and the problem of climate changes.

p. 79 (Meteorologicke Zpravy) Vol 10, no. 3 June 1957. Praha, Czechoslovakia.

SO: Monthly Index of East European Accessions (EEAI) LC, Vol. 7, no 1 Jan 1958

Country : CZECHOSLOVAKIA
Category: Forestry Forest Cultures

Abs Jour: RZhBiol , No 12, 1958, No 53494

Author : Landa, Miroslav
Inst :
Title : On the Compatibility of the Problems of Lumber-Production with the Problems of Protective (landslides, erosion) Forest Propagation.

Orig Pub: Lesn. prace, 1957, 36, No 3, 101-104

Abstract: This article turns attention to the necessity of combining the meliorative and anti-erosion functions of the forest cultures in the mountain regions of Czechoslovakia with the problems of producing high grade commercial lumber. -- M.K. Bush

Card : 1/1

LANDA, M.

Technological tasks of forest-soil reclamation in Czechoslovakia.

P. 30. (VODNI HOSPODARSTVI) (Praha, Czechoslovakia) No. 1, Jan. 1958

SOURCE: Monthly Index of East European Accession (EEAI) LC Vol. 7, No. 5, 1958

LANDA, M.

SCIENCE

Periodicals: METEOROLOGICKE ZPRAVY. Vol. 11, no. 6, Dec, 1958

LANDA, M. Changes of climate and forestry. p. 160.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 5, May 1959, Unclass.

LANDA M.

K

COUNTRY : Czechoslovakia
CATEGORY : Forestry. Forest Cultures.

ABS. JOUR. : RZhBiol., No. 2, 1959, No. 6193

AUTHOR : Landa, M.
INST. :
TITLE : Planting and Caring for Shoreline Stands when Afforesting Small Water Sources (in Czechoslovakia).

ORIG. PUB. : Ochrana prirody, 1958, 13, No.1, 20

ABSTRACT : No abstract

CARD: 1/1

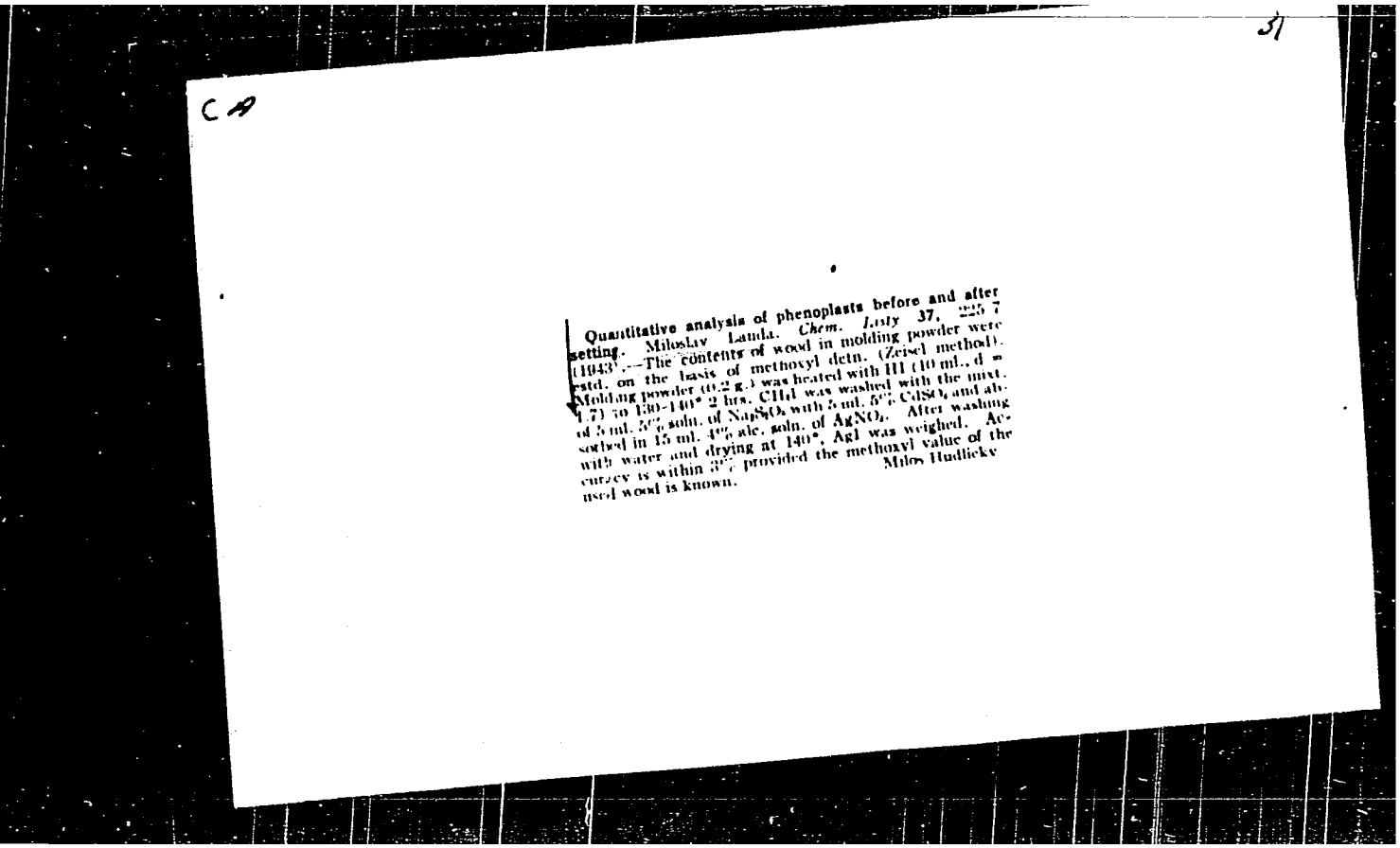
59

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510014-1"

LANDA, Miroslav, inz.

The exhibition "Forests must live". Vestnik vyzk zemedel 9 no.6:303-304 '62.

1. Ustav vedeckotechnickych informaci, Ministerstvo zemedelstvi, lesniho a vodniho hospodarstvi.

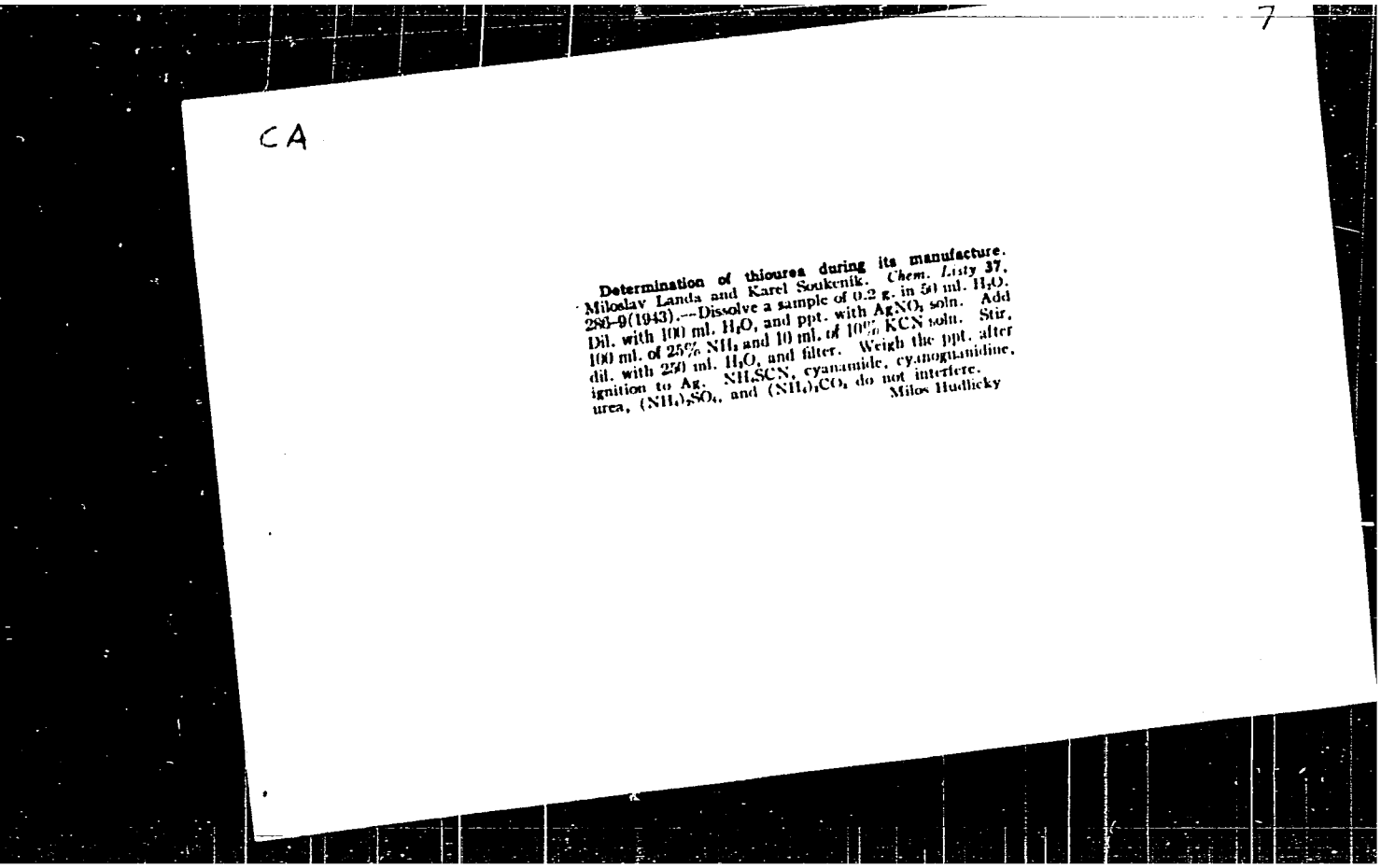


CA

31

**Quantitative analysis of phenoplasts before and after setting.** Miloslav Landa. *Chem. Listy* 37, 225-7 (1943).—The contents of wood in molding powder were detd. on the basis of methoxyl detn. (Zeisel method). Molding powder (0.2 g.) was heated with HI (10 ml., d = 1.7) 30 130-140° 2 hrs. CH$_3$I was washed with the mixt. of 5 ml. 5% soln. of Na$_2$SO$_3$ with 5 ml. 5% CdSO$_4$ and absorbed in 15 ml. 4% alc. soln. of AgNO$_3$. After washing with water and drying at 140°, AgI was weighed. Accuracy is within 3% provided the methoxyl value of the used wood is known.

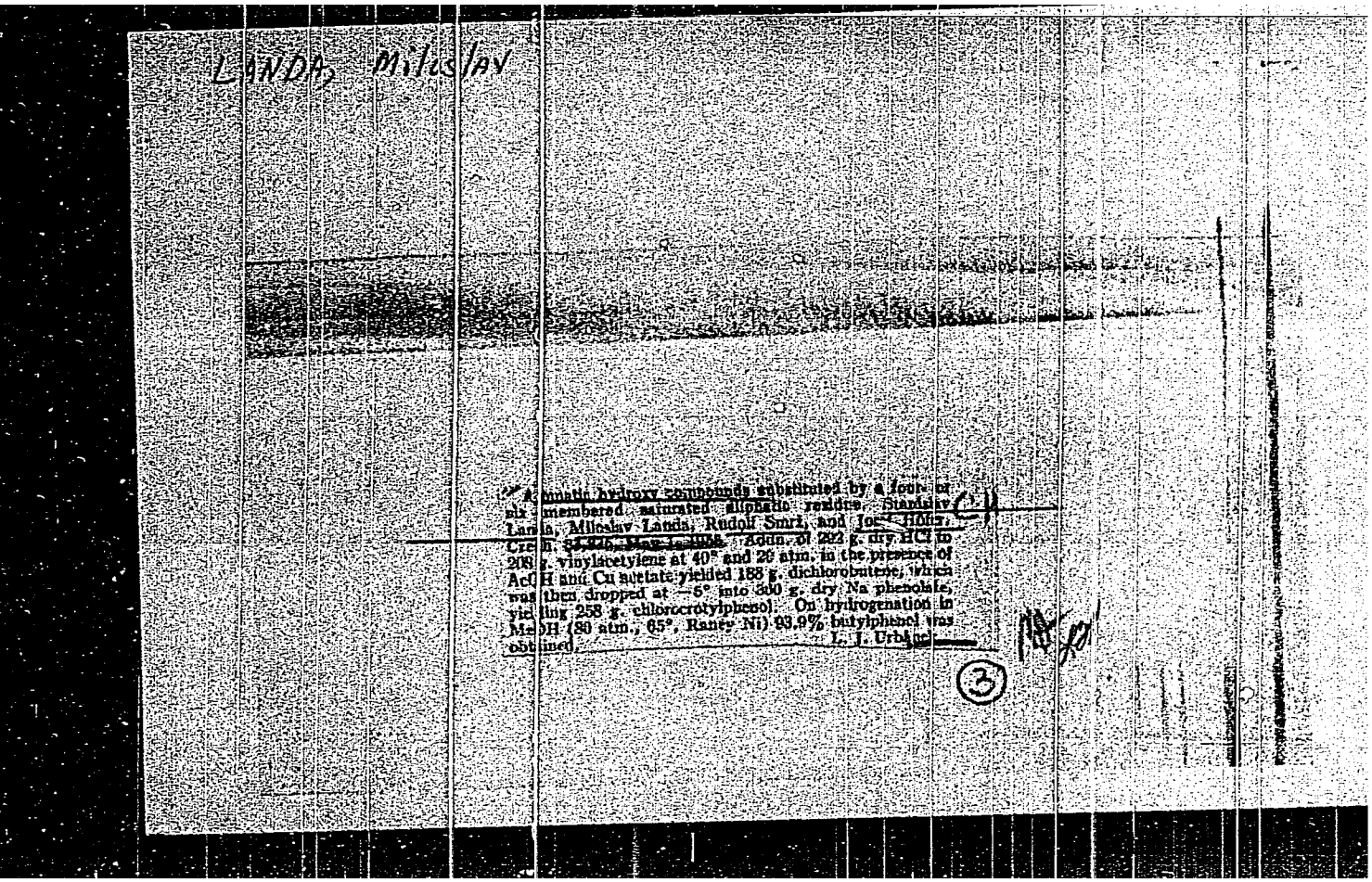
Milos Hudlicky



7

CA

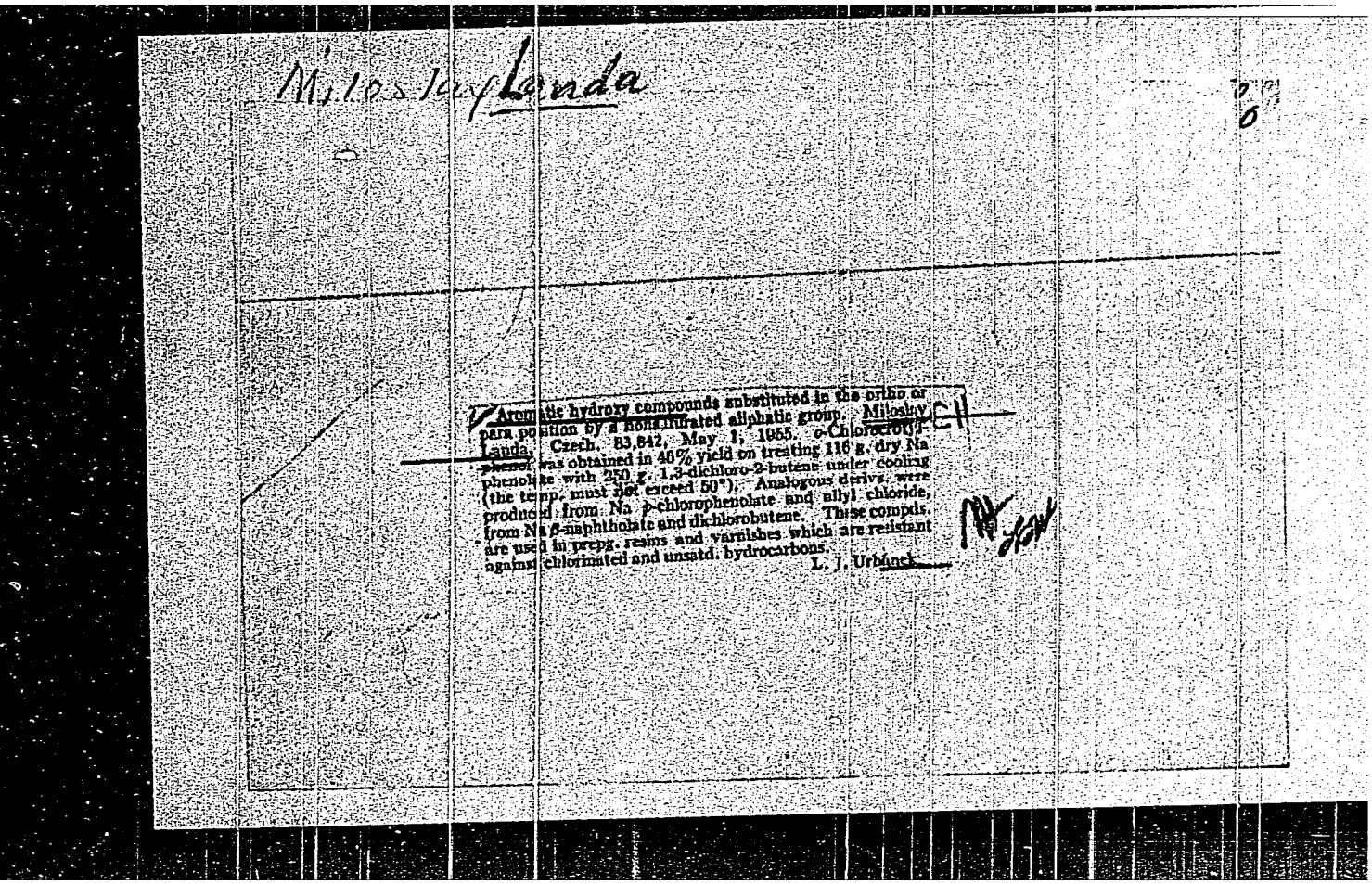
**Determination of thiourea during its manufacture.** Miloslav Landa and Karel Soukenik. *Chem. Listy* **37**, 286–9(1943).—Dissolve a sample of 0.2 g. in 50 ml. $H_2O$. Dil. with 100 ml. $H_2O$, and ppt. with $AgNO_3$ soln. Add 100 ml. of 25% $NH_3$ and 10 ml. of 10% KCN soln. Stir, dil. with 250 ml. $H_2O$, and filter. Weigh the ppt. after ignition to Ag. $NH_4SCN$, cyanamide, cyanoguanidine, urea, $(NH_4)_2SO_4$, and $(NH_4)_2CO_3$ do not interfere.
Milos Hudlicky



LANDA, Miloslav

matic hydroxy compounds substituted by a four- or six-membered saturated aliphatic residue. Stanislav Landa, Miloslav Landa, Rudolf Smrž, and Jos. Hofer. Chem. listy 51, 975, May 1957. Addn. of 202 g. dry HCl to 208 g. vinylacetylene at 40° and 20 atm. in the presence of AcOH and Cu acetate yielded 188 g. dichlorobutene, which was then dropped at −5° into 300 g. dry Na phenolate, yielding 258 g. chlorocrotylphenol. On hydrogenation in MeOH (80 atm., 65°, Raney Ni) 93.9% butylphenol was obtained. L. I. Urblíc

(3)



Miloslav Landa

Aromatic hydroxy compounds substituted in the ortho or para position by a nonconjugated aliphatic group. Miloslav Landa, Czech. 83,842, May 1, 1955. o-Chlorocetyl phenol was obtained in 46% yield on treating 116 g. dry Na phenolate with 250 g. 1,3-dichloro-2-butene under cooling (the temp. must not exceed 50°). Analogous derivs. were produced from Na p-chlorophenolate and allyl chloride, from Na β-naphtholate and dichlorobutene. These compds. are used in preps. resins and varnishes which are resistant against chlorinated and unsatd. hydrocarbons.

L. J. Urbánek

LANDA, M.

Soviet hydrogenation refining of sulfur products from crude oil on an industrial scale.

P. 609. (CHEMICKY PRUMYSL) (Praha, Czechoslavakia) Vol. 7, no. 11, Nov. 1957

SO: Monthly Index of East European Accession (EEAI) LC, Vol. 7, No. 5, May 1958

CZECHOSLOVAKIA / Chemical Technology, Chemical Products and Their Application. Safety and Sanitation. H-6

Abs Jour : Ref Zhur - Khimiya, No 5, 1959, No. 15912

Author : Landa, M.
Inst : Not given
Title : Pyrophoricity of Iron Sulfide

Orig Pub : Chem. prumysl, 1958, 8, No 5, 253-254

Abstract : Pyrophoric properties of iron sulfide are reviewed. Examples of accidents resulting from the above are given. Safety measures are recommended for working with equipment (such as storage tanks, pipes, and other process equipment) which has or may have deposits of iron sulfide. Bibliography includes 10 titles. -- R. Terekhin

Card 1/1

H-20

47087

Country : Czechoslovakia
Category :
Abs. Jour. :
Author : Landa, M.
Institut. :
Title : Homopyrocatechol as a Photographic Developer

Orig Pub. : Chem. prumysl, 1958, 8, No 8, 419-420

Abstract : Presentation of the results of sensitometric tests of the photographic characteristics of homopyrocatechol (4-methyl-pyrocatechol) in comparison with those of the pyrocatechol- and metol-hydroquinone developers.-- K. Markhilevich

Card:

CZ/4-60-3-8/44

AUTHOR: Landa, Miloslav, Doctor Engineer

TITLE: Protection of Materials Against Corrosion.

PERIODICAL: Nová Technika, 1960, No. 3, p. 116

ABSTRACT: The author informs on the Den nové techniky (Day of New Engineering) organized in September 1959 by the Čs. VTS, Sekce pro využití paliv, Stalinovy závody, n.p. (Čs. VTS, Section for Utilization of Fuel, Stalin Plant, People's Enterprise) at Záluží v Krušných horách. About 200 representatives of plants, subordinated to the Ministerstvo chemického prumyslu (Ministry for the Chemical Industry), of research institutes, universities, offices, of newspapers and of the Odborový svaz zaměstnancu v chem. prumyslu (Trade Union of Employees of the Chemical Industry) took part in this Conference. Engineer J. Urban read a paper on the problems of material protection at the Stalin Plant; Engineer Vlad.Čihal from the SVÚOM Institute in Prague reported on materials resisting high-pressure hydrogen, oxygen, synthetic mixtures and ammonia. Engineer Doležel from the same Institute informed on the use of plastic materials in the chemical industry, and Engineer M. Svoboda on protective coatings of steel structures. Doctor Engineer G. Šebor reported on experiences made with "Polychloroprene latex" in the protection

Card 1/2

Protection of Materials Against Corrosion. CZ/4-60-3-8/44

of mining equipment at the coal-basin of Kladno. Engineer Sklenář read a paper on the corrosion of hydrogenation and distillation plants in the course of processing salty and phosphorous oils, Engineer Beránek discussed the experiences made by the SVÚOM and the Stalin Plant, and finally Engineer Zigmund from the Ministry for the Chemical Industry informed on the organizational measures taken by the Ministry in the field of corrosion protection. A synopsis of the lectures and discussions was prepared by the experts of the Chemoprojekt Plant in Prague, dealing with metallic and nonmetallic materials, with the surface preparation against corrosion, with cements, electric protection, and with protection of inhibitors. A second synopsis, prepared by the Ministry for the Chemical Industry under guidance of Engineer Zigmund. deals with the work performed in 1958 and 1959 by the plants subordinated to the Ministry, and with the planned work for 1960. A six-point resolution was passed by the Conference including the future planning in the field of anticorrosion materials.

ASSOCIATION; Čs.VTS, sekce pro využití paliv, Stalinovy závody, n.p., Záluží v Krušných horách (Čs.VTS, Section for Utilization of Fuel, Stalin Plant, People's Enterprise, in Záluží v Krušných horách).

Card 2/2

Z/004/60/000/006/003/003
A121/A126

AUTHORS: Landa, Mil., and Schnabel, B., Doctors of Engineering

TITLE: Turbine oils

PERIODICAL: Nová Technika, no. 6, 1960, 264-265

TEXT: The authors report on the "Day of New Engineering" organized in March 1960 at the Stalinovy zavody (Stalin Plants) by the ZP (Plant Branch of Čs. VTS. Problems of turbine oils were treated. Engineer Ctirad Náhlovský of the n.p. Benzina (Benzina, People's Enterprise) stated that about 90% of electric energy is supplied by steam power plants, the turbines of which operate at high pressure and high temperatures with a high rate of revolutions, therefore the lubrication problem is of extraordinary significance. Since 1956, turbine oils are produced in the ČSR, too. Engineer Václav Mašek of the Ostravská rafinéria minerálních olejů n.p. (Mineral Oil Refinery at Ostrava, People's Enterprise) reported on "Testing and Production Problems of Turbine Oils During the Past Ten Years" and described evaluation methods of turbine oils according to various standards; the number of testing devices making emulsification tests possible according to the standard ČSN 65 62 30, however, does not suffice. The Mineral

Card 1/3

Z/004/60/000/006/003/003
A121/A126

Turbine oils

Oil Refinery at Ostrava performed examinations of the chromatographic composition of the constant oil "S" and of the ageing of various fractions under conditions of the BBC test. Engineer Stehlík of the První brněnské strojírny n.p. (First Mechanical Engineering Plant at Brno, People's Enterprise) reported on turbine oils with regard to the production of turbines; on requirements, i.e. purity, viscosity index, adhesion, antioxidant properties of oils; etc. The constant of copper is disadvantageous, therefore copper tubes should be replaced by iron or bronze ones. Engineer Kulhánek of the Stalin Plant Electric Power Station informed on the cooperation with the n.p. Chema (Chema, People's Enterprise) and the Benzina, People's Enterprise, in testing new turbine oils of Czechoslovak origin, on the regeneration of oils by means of additives, and on oil tubes cleaning by means of air blast according to the method developed by Prokop of the First Mechanical Engineering Plant at Brno. The lecture read by Dragoun of the Ostramo n.p. (Ostramo, People's Enterprise) treated the problem of "Oil additives against rust formation". The additives Santolube AR and Santolube 75 decrease the resistance of oil against ageing. Tests were made with a combination of the above mentioned additives and the anti-ageing additive Driverol. The authors Dragoun and Engineer Večerka stated that the primary choice of corresponding turbine oils should be observed. Doctor of Engineering B. Schnabel of the Stalin

Card 2/3

LANDA, Miloslav, inz., dr.

Protection of materials against corrosion. Nova technika no.3:116 Mr '60.

1. Ceskoslovenska vedecko-technicka spolecnost, sekce pro vyuziti paliv; Stalinovy zavody, n.p., Zaluzi v Krusnych horach.

LANDA, Mil., inz., dr.; SCHNABEL, B., inz., dr.

Oil for steam turbines. Nova technika no.6:264-265 '60.

LANDA, Miroslav [illegible].

Design of the basalt fusion plant [illegible].
Sklar a keramik [illegible] no. 7 [illegible].

1. Skloprojekt, Prague.

OSTASHEVSKAYA, N.S.; OLENTSEVICH, N.A.; BASHKATOVA, A.S.; LANDA, M.B.; KUNSHCHIKOVA, A.A.; LISIN, D.M.; KUROV, V.V.; YEMEL'YANOV, N.A.; FAKTOROVICH, B.A.; KUROKHTIN, A.M.

Industrial testing of Listvyanka anthracite for lining the bottom of aluminum electrolytic cells. TSvet.met. 38 no.10:62-66 O '65. (MIRA 18:12)

LANDA, M.I.

Certain problems in the diagnosis and treatment of closed intestinal injuries. Khirurgiia, Moskva 34 no.11:49-52 N '58. (MIRA 12:1)

1. Iz travmatologicheskogo otdeleniya (zav. M.I. Landa) bol'nitsy (glavnyy vrach V.F. Zubko) mediko-sanitarnoy chasti shakhty "Krasnaya Zvezda" Stalinskoy oblasti.
(INTESTINES, wds. & inj.
closed, diag. & ther. (Rus))

LANDA, M.I. (Stalinskaya obl., Chistyakovo, l. ul. Levanevskogo d. 41)

A rare abdominal injury. Nov. khir. arkh. no.2:123-124 Mr-Ap '59.
(MIRA 12:7)

1. Travmatologicheskoye otdeleniye (zav. - M.I. Landa) medsanchasti shakhty "Krasnaya zverzda" Chistyakovskogo rayona, Stalinskoy oblasti.
(ABDOMEN--WOUNDS AND INJURIES)

LANDA, M. I. (Chistyakovo 9, Donetskoy obl., Sovkhoznyy per., d.4)

Injuries and complications associated with fractures of pelvic bones. Ortop., travm. i protez. 24 no.8:8-13 Ag '63.
(MIRA 17:1)

1. Iz travmatologicheskogo otdeleniya (zav. - M.I. Landa) Chistyakovskoy bol'nitsy mediko-sanitarnoy chasti.

LANDA, N., inzh.

Soil piles. Stroitel' no.6:22 Je '60. (MIRA 13:7)
(Foundations) (Soil stabilization)

MILLER, Boris Nikolayevich; TORBAN, S.S., spetsred.; LANDA, N.G., red.; FORMALINA, Ye.A., tekhn. red.

[Mechanization of fish processing on ships] Mekhanizatsiia obrabotki ryby na sudakh. Moskva, Vses. nauchno-issl. in-t morskogo rybnogo khoz. i okeanografii, 1960. 51 p. (MIRA 14:10)
(Fishery products—Preservation)

LANDA, N.G., red.; ZAYTSEV, G.N., spetsredaktor; UKRAINTSEVA, D.V., tekhn. red.

[Problems concerning the fishery productivity of seas] Voprosy promyslovoi produktivnosti morei. Moskva, 1960. 55 p. (MIRA 14:5)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut morskogo rybnogo khozyaystva i okeanografii.
(Marine biology)

MARTI, Yu.Yu., otv.red.; MASLOV, N.A., zam.otv.red.; ALEKSEYEV, A.P., red.; VINOGRADOV, L.G., red.; DMITRIYEV, N.A., red.; ZAYTSEV, G.N., red.; KONSTANTINOV, K.G., red.; MUNTYAN, V.M., red.; CHUMAKOVA, L.S., red.; YUDANOV, I.G., red.; LANDA, N.G., red.; AYNZAFT, Yu.S., red.; KLYACHKO, I.I., red.; UKRAINTSEVA, D.V., tekhn.red.

[Soviet fisheries investigations in North European seas] Sovetskie rybokhoziaistvennye issledovaniia v moriakh Evropeiskogo Severa. Moskva, Rybnoe khoziaistvo VNIRO, 1960. 468 p. (MIRA 14:1)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut morskogo rybnogo khozyaystva i okeanografii. 2. Vsesoyuznyy nauchno-issledovatel'skiy institut morskogo rybnogo khozyaystva i okeanografii (for Marti, Dmitriyev, Zaytsev). 3. Polyarnyy nauchno-issledovatel'skiy institut morskogo rybnogo khozyaystva i okeanografii (for Maslov, Alekseyev, Yudanov).
(Fisheries--Research)

NIKONOROV, Ivan Vasil'yevich; PATEYEV, Abdulla Khakimzhanovich; LANDA, N.G., red.

[Pump fishing of saury using light and current] Lov sairy nasosom s primeneniem sveta i toka. Moskva, Pishchevaia promyshlennost', 1964. 28 p. (MIRA 17:12)

TRESHCHEV, A.I.; LANDA, N.G., red.

[Selectivity in trawl fisheries] Izbiratel'nost' tralovogo rybolovstva. Moskva, Pishchevaia promyshlennost', 1964. 95 p. (MIRA 17:12)

BORISOV, Pavel Gavrilovich; L'VOVA, N.G., red.

[Scientific studies on fisheries in seas and freshwater bodies] Nauchno-promyslovye issledovaniia na morskikh i presnykh vodoemakh. Izd.2., ispr. i dop. Moskva, Pishchevaia promyshlennost', 1964. 259 p. (MIRA 18:1)

BURMAKIN, Yevgeniy Vladimirovich; LANDA, N.G., red.

[Chemical method of developing lakes for fisheries] Khimicheskii metod rybokhoziaistvennogo preobrazovaniia ozer. Moskva, Pishchevaia promyshlennost', 1965. 55 p. (MIRA 18:10)

VLASOVA, A.N., kand.med.nauk; YEREMEYEVA, A.S.; LANDA, N.M.

Erythromyelosis (Di Guglielmo's disease) in a 10-month-old girl. Pediatriia no.7:76-77 '61. (MIRA 14:9)

1. Iz kafedry gospital'noy pediatrii (zav. - prof. K.F. Popov), kafedry propedevtiki detskikh bolezney (zav. - prof. V.A. Vlasov) II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova, dizenteriynogo otdeleniya (zav. - zasluzhennyy vrach SSSR P.I. Bogomolova) i patologoanatomicheskogo otdeleniya (zav. N.I. Soboleva) na baze Detskoy bol'nitsy imeni N.F. Filatova (glavnyy vrach M.N. Kalugina).

(LEUKEMIA)

RUDNIK, M.S.; LANDA, P.I.

Circular-saw wood-cutting machines. Standartizatsiia 27 no.10:39-40 O '63. (MIRA 16:11)

LANDA, P.S.

LANDA, P.S.

Electrical modeling of self-oscillating systems. Vest. Mosk. un. Ser. mat. mekh., astron., fiz., khim. 11 no.2:103-108 '56. (MIRA 10:12)

1. Kafedra teorii kolebaniy Moskovskogo gosudarstvennogo universiteta.
(Oscillations--Electromechanical analogies)
(Electronic calculating machines)

STRATONOVICH, P. L., LANDA, P. S. (MGU, Moscow)

"The Noise Influence on an Oscillator With RIgid Excitation."

report presented at the All-Union Conference on Statistical Radio Physics, Gor'kiy, 13-18 October 1958. (Izv. vyssh uchev zaved-Radiotekh., vol. 2, No. 1, pp 121-127) COMPLETE card under SIFOROV, V. I.)

LANDA, P.S., Cand of Phys-Math Sci — (diss) "On the Stability of Automatic Oscillating Systems and the System of Authomatic Control under the Best Available Conditions," Moscow, 1959, 6 pp (Moscow State Univ im Lomonosov) (KL, 5-60, 123)

06333
SOV/141-2-1-5/19

AUTHORS: Stratonovich, R.L. and Landa, P.S.

TITLE: The Effect of Noise on an Oscillator with Hard Excitation

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1959, Vol 2, Nr 1, pp 37 - 44 (USSR)

ABSTRACT: The growth process in an oscillator with soft excitation has already been studied (Refs 1, 2); a linear approximation, valid at small amplitudes, was used. With hard excitation the situation is more complex since the presence of noise may either encourage or inhibit oscillations and a more sophisticated approach is needed. The problem is of interest in closed-loop control systems (which are potential oscillators) and the case examined here is such a second-order circuit. In the presence of noise and an external harmonic signal, it is described by Eq (1). If it may be assumed that the correlation time of the noise is much less than the relaxation time of the system - if Eq (1) is converted into phase-plane coordinates and the noise has zero mean spectral density then the corresponding Fokker-Plank equation is Eq (4). Introducing the potential function at the top of p 39, allowing for the

Card1/3

The Effect of Noise on an Oscillator with Hard Excitation

order of smallness of noise and external signal, there are 2 regions of greatest probability in the phase-plane corresponding to 2 stable states of the oscillator: unexcited and excited. Between these 2 regions lies another, of low probability, representing an unstable condition. Figure 1 shows the phase plane, the shaded area $S_1$ is for the 'unexcited' and $S_2$ for the 'excited' states. The expressions for the curves $\Gamma_1$ and $\Gamma_2$ are at the foot of p 39 and head of p 40, respectively. The probabilities of the unexcited and excited states are Eqs (8) and (9), respectively. These can be found as time functions by solving the Fokker-Plank equation. In an oscillator with hand excitation, the presence of noise means that both growth and decay processes exist simultaneously. The probability of the state-point being at any particular place is conveniently thought of as the result of two counter-flows of probability between the regions. The probability that the oscillator will remain unexcited if originally so

The Effect of Noise on an Oscillator with Hard Excitation

is Eq (20) and the probability that oscillations will cease is Eq (21). These expressions evidently depend on $k_{10}$ and $k_{20}$, as defined in Eqs (24) and (25), when there is no external signal and Eqs (26) and (27) when there is. In the former case, the potential function is Figure 2. Figures 3 and 4 show the mean frequency of change of state as a result of noise. The oscillator is more often excited than otherwise. S.P. Strelkov is thanked for assistance.
There are 4 figures and 4 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)
SUBMITTED: May 24, 1958

Card 3/3

67535

9.3260

AUTHOR: Landa, P.S. SOV/141-2-3-10/26

TITLE: Investigation by Means of an Analogue of the Effect of Noise on an Over-critical Coupled Oscillator

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1959, Vol 2, Nr 3, pp 400 - 407 (USSR)

ABSTRACT: The work is a continuation of an earlier article (Ref 1) which gave a theoretical analysis relating to the effects caused by regular and random external signals in an oscillator with an over-critical excitation. In the following, these effects were investigated experimentally. The experimental equipment comprised a standard DC integrator containing non-linear elements and infra-low frequency generators of sinusoidal oscillations and noise. The infra-low frequency noise generator was prepared at the Physics Faculty of MGU (Moscow State University) by Yu.M. Romanovskiy (Ref 3). The oscillatory system, which was analogued by the equipmen is described by:

$$\ddot{z} + \omega_0^2 z = 2\delta(z)z - \omega_0^2 E \sin \omega_0 t - \omega_0^2 \zeta(t) \qquad (1)$$

Card 1/6

4

Investigation by Means of an Analogue of the Effect of Noise on an Over-critical Coupled Oscillator SOV/141-2-3-10/26

where $\delta(z) = -\delta(1-4\alpha z^2+8\beta z^4)$ and $\zeta(t)$ is the noise at the input of the generator. By introducing a set of analogue coordinates:

$$V_1 = z; \quad V_2 = \dot{z}/\omega_o; \quad V_E = -E; \quad V_\zeta = -\zeta(t); \quad t = \tau ,$$

Eq (1) can be written as Eqs (2). The block schematic of the analogue is given in Figure 1. In order to obtain the quantitative results, it is necessary to measure the intensity of noise $\lambda^{-1}$. This is related to the spectral density of noise $2\varkappa(\omega)_o$ at a frequency $\omega_o$ by:

$$\lambda^{-1} = \omega_o^2 \varkappa(\omega_o)/4 \qquad (3) .$$

The measurement of the noise intensity was carried out by the analogue shown in the block schematic of Figure 2. In this, the output of the noise generator was applied to a narrow-band resonance circuit, having

Card 2/6

Investigation by Means of an Analogue of the Effect of Noise on an Over-critical Coupled Oscillator

a frequency characteristic $F(\omega)$. The resulting voltage was squared by means of one of the non-linear circuits and then integrated over a time $T_1$. The output at the integrator was therefore in the form of Eq (4), where $\Delta f$ is the equivalent bandwidth of the resonant circuit and $\gamma$ is the overall transfer coefficient of the system at $\omega_o$. In order to determine $\gamma$, a sinusoidal voltage having an amplitude $E_o$ and frequency $\omega_o$ was applied to the system. The signal at the output of the integrator was then expressed by Eq (5), where $T$ is the time of integration. By comparing Eqs (4) and (6), it is found that $\varkappa(\omega_o)$ is given by Eq (6). Consequently, the noise intensity is expressed by Eq (7), where $RC_I = 1/\omega_o$, while the second time constant $RC_{II}$ was equal to 0.1507 sec.

Investigation by Means of an Analogue of the Effect of Noise on an Over-critical Coupled Oscillator

The average time during which the oscillator remains in the excited or non-excited states can be determined by two methods. The first method relies on the direct measurement of these quantities by averaging a large number of individual time measurements. On the basis of these measurements, it is possible to determine the probability functions:

$$p(t) = 1 - e^{-t/t_{2cp}}; \quad q(t) = 1 - e^{-t/t_{1cp}} \qquad (9)$$

where $p(t)$ is the probability of the disappearance of oscillations during a time $\tau \leq t$, $q(t)$ is the probability of the appearance of oscillations during a time $\tau \leq t$, $t_{1cp}$ is the average time during which the oscillator is in the state of excitation, while $t_{2cp}$ is the average time during which the oscillations are absent. Figure 3 shows theoretical and experimental

Investigation by Means of an Analogue of the Effect of Noise on an Over-critical Coupled Oscillator

graphs of $t_{1cp}$ and $t_{2cp}$ as a function of the noise intensity $\lambda^{-1}$ for the following values of the parameters in the system: $E = 0$; $\omega_0^2 = 98/sec^{-2}$; $\delta = 0.0895/sec^{-1}$; $\alpha = 2.307 \times 10^{-3}/V^{-2}$; $\beta = 0.985 \times 10^{-6}/V^{-4}$. The results of the experimental measurement of the probabilities $p(t)$ and $q(t)$ for small and large noise inputs are given in Figures 4 and 5; the continuous dashed curves represent the values calculated by means of Eqs (9); it is seen from these figures that at large noise inputs, the probability $q(t)$ deviates from the exponential distribution law. The second method of measuring the time $t_{1cp}$ and $t_{2cp}$ is based on the formulae which were derived in the earlier work; these are represented by Eqs (10) and (11), where $W(A,\varphi)$ is the steady-state probability density distribution satisfying the zero boundary condition. The measurement

Card 5/6

4

Investigation by Means of an Analogue of the Effect of Noise on an Over-critical Coupled Oscillator

of $W(A, \varphi)$ can be effected photometrically by taking a long-term phase picture of the system by means of a long-exposure oscillogram. An example of such a picture is shown in Figure 6. From the investigation, it is concluded that the theory (Ref 1) is in good agreement with experiment, provided the input noise is not too high. The author expresses his gratitude to S.P. Strelkov for his interest in this work and to V.B. Skomorokhov who took part in the experiments. There are 6 figures, 1 table and 6 Soviet references, 1 of which is a translation from English.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: December 11, 1958

Card 6/6

16.9500

77474
SOV/103-21-1-5/22

AUTHOR: Landa, P. S. (Moscow)

TITLE: On Stability of Servosystems in the Presence of Random Disturbances

PERIODICAL: Avtomatika i telemekhanika, 1960, Vol 21, Nr 1, pp 36-41 (USSR)

ABSTRACT: The author discusses conditions of excitation of a servosystem containing a nonlinear element of backlash type, in the absence and in the presence of noise. Figure 1 shows the block diagram of the servosystem under discussion. Assuming that the control g(t) changes very slowly in comparison with the natural frequency of the oscillations of the system, the following set of equations is given:

$$\ddot{x} + 2\delta\dot{x} + \omega^2 x = kz_1 - \omega^2\zeta(t), \qquad (1)$$
$$\dot{z} = b\varepsilon, \quad \varepsilon = \beta x - z, \; z_1 = f(z),$$

Card 1/12

On Stability of Servosystems in the Presence of Random Disturbances

77474
SOV/103-21-1-5/22

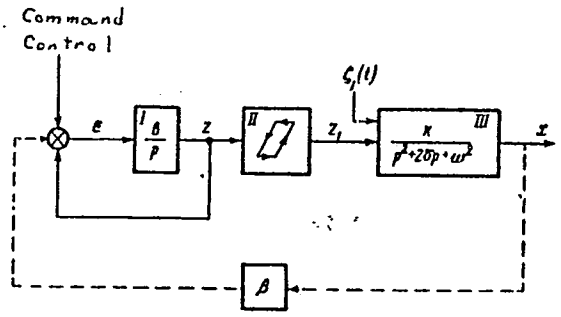



Fig. 1. (I) Servometer of hydraulic amplifer type; (II) nonlinear element of backlash type; (III) regulated object.

Card 2/12

where $\zeta(t) = -\frac{\omega^2}{k}\zeta_1(t)$ is the stationary random function with the magnitude of zero-average, and f(z) is a characteristic of the backlash shown on Fig. 2.

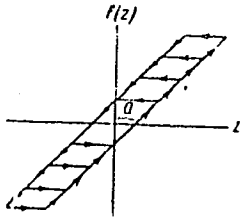



Fig. 2

On Stability of Servosystems in the Presence of Random Disturbances

77474
SOV/103-21-1-5/22

The case when the noises are absent is discussed first. Analysis of the excitation conditions of the servosystem is made on the basis of the studies by R. L. Stratonovich, Synchronization of a Self-Excited Generator in the Presence of Noise (Sinkhronizatsiya avtogeneratora pri nalichii pomekh, Radiotekhnika i elektronika, 1958, Nr 4) and by R. L. Stratonovich, P. S. Landa, Influence of Noises on the Generator With Rigid Excitation (Vozdeystvie shumov na generator s zhestkim vozbuzhdeniem, Izv. vysshikh. uchebn. zavedeniy, ser. Radiofizika, 1959, Nr 1). The change in the output magnitude $x$ of the system of Fig. 1 is given in the form:

$$x = A\cos(\omega t + \varphi), \quad \dot{x} = -A\omega\sin(\omega t + \varphi). \quad (4)$$

The coordinate z is expressed through A and $\varphi$ as follows:

Card 4/12

$$z = \frac{\beta}{\sqrt{1+\alpha^2}} A \cos(\omega t + \varphi + \psi), \quad (5)$$

where

$$\psi = \arctg(-\alpha).$$

Introducing Eqs. (4) and (5) into Eq. (1) and expanding function $f(z) = F(t)$ into Fourier series with respect to the variable t, the following set of equations in coordinates A and $\varphi$ is obtained:

$$\dot{A} = -\delta A - \frac{k\beta C}{2\omega\sqrt{1+\alpha^2}} A \sin\chi + \xi, \quad (6)$$

$$\dot{\varphi} = -\frac{k\beta C}{2\omega\sqrt{1+\alpha^2}} \cos\chi + \frac{\xi'}{A}. \quad (7)$$

where C is a function of parameter $\alpha$ of the feedback circuit; $\chi$ may be determined from equation:

$$\operatorname{tg}\chi = \alpha\pi \frac{F_\alpha(u)'}{v + \alpha(u^2 - 1)}$$

where

$$u = \left|1 - 2\frac{\alpha\sqrt{1+\alpha^2}}{|\beta|A}\right|,$$

$\xi$ and $\xi'$ are $\delta$-correlated random functions of zero-average magnitude and with correlation function $K(\tau) = 2\lambda^{-1}\delta(\tau)$ where $\lambda^{-1} = \omega 2/4$; $\kappa(\omega)$; $\kappa(\omega)$ is half of the spectral noise density $\zeta$ at frequency $\omega$. Validity conditions of Eq. (6) and (7) are given. Stability of the system may be established analyzing Eq. (6). The magnitudes of limiting cycles in the absence of noise are determined from:

$$\frac{k\beta}{2\omega\sqrt{1+\alpha^2}} C \sin\chi = -\delta$$

or

$$F_\alpha(u) = -\frac{2\omega\delta(1+\alpha^2)}{k\beta\alpha}. \qquad (9)$$

where $\alpha = \omega/b$. Figure 3 shows the diagram of $F_\alpha(u)$ as function of u at various $\alpha$ magnitudes. The limiting cycles exist when the following conditions are satisfied:

$$\beta < 0, \quad k > \frac{2\omega\delta(1+\alpha^2)}{|\beta|\alpha F_\alpha(u_0)} = \frac{k_0}{F_\alpha(u_0)}.$$

A case is then discussed when noises are present. The probability of excitation of the system from the action of random forces is determined by the method of

Card 7/12

On Stability of Servosystems in the Presence of Random Disturbances

77474
SOV/103-21-1-5/22

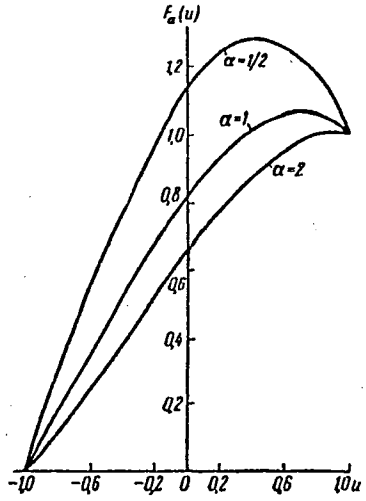



Fig. 3

Card 8/12

approximate solution of the Fokker-Planck equation. To this purpose the following additional conditions must be imposed on the magnitude of the random disturbing force:

$$\frac{1}{\sqrt{\lambda\delta}} \ll A_0, \quad \frac{1}{\sqrt{\lambda K}} \ll A_0, \qquad (10)$$

where

$$K = -\frac{\partial^2 U(A)}{\partial A^2}\Big|_{A=A_0},$$

$$U(A) = \delta\frac{A^2}{2} - \frac{2k\alpha n^2}{\omega|\beta|}\int \frac{F_\alpha(u)}{(1-u)^2}\,du.$$

The Fokker-Planck equation for the distribution density of amplitudes w(A,t) is:

$$\frac{\partial w}{\partial t} = -\frac{\partial G}{\partial A}, \qquad (11)$$

Card 9/12 where

$$G = -\left[\delta + \frac{k\beta_\alpha F_\alpha(u)}{2\omega(1+\alpha^2)}\right] Aw + \frac{1}{\lambda A} w - \frac{1}{\lambda}\frac{\partial w}{\partial A}.$$

The probability of excitation of the system at $\tau \leqslant t$ equals $q(t) = 1 - e^{-\gamma/2t}$, where

$$\gamma = G_0|_{A=A_*},$$

$$G_0 = -\left[\delta + \frac{k\beta_\alpha F_\alpha(u)}{2\omega(1+\alpha^2)}\right] Aw_0 + \frac{1}{\lambda A} w_0 - \frac{1}{\lambda}\frac{dw_0}{dA},$$

For $\omega_0$ (A) the stationary solution of Fokker-Planck equation at zero boundary limit condition can be approximately taken as:

$$\frac{dG_0}{dA} = 0,$$

$$w_0(A_0) = 0, \quad \int_0^{A^*} w_0(A)\,dA = 1. \qquad (12)$$

Taking into account the zero boundary limits and the conditions (10), the following resultant equation for $\gamma$ is obtained:

$$\gamma = \delta A_0 \sqrt{\frac{2\lambda K}{\pi}}\, e^{-\lambda U(A_0)},$$

where

$$K = \frac{a\alpha k}{A_0 \omega \sqrt{1+a^2}} \left.\frac{dF_\alpha(u)}{du}\right|_{A=A_0}.$$

On Stability of Servosystems in the Presence of Random Disturbances

77474
SOV/103-21-1-5/22

In this manner is determined the probability of excitation of the system during an arbitrarily fixed time interval. The average time of system excitation is $t_{aver} = 2/\gamma$. The paper's conclusions are that: (1) The presence of backlash-type nonlinearity can lead to an undesirable excitation of the system. (2) The excitation obtained is of rigid type. (3) Even at a small noise, such a time interval may be demonstrated at which the system would excite with a probability as near unity as desired. The assistance of Professor S. P. Strelkov is acknowledged. There are 3 figures; and 2 Soviet references.

SUBMITTED: April 13, 1959

Card 12/12

84471

16.7300 1347, 1103, 1327
10.6200

S/103/60/021/010/002/010
B012/B063

AUTHORS: Landa, P. S., Strelkov, S. P. (Moscow)

TITLE: Stability of the Aileron Control System in the Presence of Turbulent Disturbances

PERIODICAL: Avtomatika i telemekhanika, 1960, Vol. 21, No. 10, pp. 1352-1364

TEXT: The wings of a flying airplane form a complex system of irregular vibrations with distributed parameters. Even modern computers are not able to solve the mathematical problem of wing stabilization. A commonly used method of approximation is that described in Ref. 1, which was devised by Rayleigh and Ritts, and was further developed by Bubnov and Galerkin. In this method, the wing and the aileron, which are in a steady flow of air, are regarded as a vibrating system with two degrees of freedom, in which some parameters depend on the flow velocity. In the present paper, the authors investigate the vibrations and stability of such a system strongly influenced by non-linear elements and statistical actions which are caused by the turbulence of the atmosphere. The statistical

Card 1/4

Stability of the Aileron Control System in the Presence of Turbulent Disturbances

estimate of the probability that such vibrations occur during a given time interval is described next. Since the calculations are very extensive and time-consuming inspite of all the approximations made here, the authors first determine the limits of the possible modes of operation by using the method of simulation. Then, they calculate the amplitudes of the limiting cycles and the excitation probabilities for the parameter values obtained. By using the Bubnov-Galerkin method, they write down equations (1) for the bending vibrations of a wing with an aileron fixed on one side (see Fig. 1), and derive the basic equations (2) for these bending vibrations. Then, they study the basic formulas for the bending vibrations of a wing with a hydraulically controlled aileron. The principle of such a control system is shown in Fig. 2 and explained. Formula (3) expresses the vibrations occurring in the hydraulic system shown in Fig. 2. Next, the authors describe the determination of the stability range of an airplane wing for the case in which there are no non-linear elements in the control system of the aileron. This is done on an electric simulator. The measurement of the probability that the system is excited in the presence of turbulent disturbances is described. Then, the authors give a theoretical calculation of the stability of airplane wings in the presence of

Card 2/4

Stability of the Aileron Control System in the Presence of Turbulent Disturbances

turbulent disturbances by using the Krylov - Bogolyubov method (harmonic linearization). In conclusion, they note that the existence of a parasitic positive feedback in the control system leads to an extension of the range of instability. Due to a strong excitation of vibrations during the flight through a turbulent atmosphere, the vibrations of the wings may increase. The probability that this occurs within a certain time interval depends on the intensity of fluctuations caused by the turbulent disturbance of the vertical component of flying speed. This probability decreases considerably with decreasing intensity. The principal part in the excitation of the system is played by the spectral components of turbulent disturbances near the frequency of the characteristic bending vibrations of the wing. The time of excitation of dangerous vibrations of wings may be statistically estimated as a function of the flying speed and the eigenfrequency of the aileron by using the above-described theoretical methods combined with investigations of the system on a simulator. The authors thank R. L. Stratonovich for his valuable advice. There are 8 figures, 2 tables, and 12 references: 8 Soviet.

Card 3/4

8447l
S/103/60/021/010/002/010
B012/B063

Stability of the Aileron Control System in the Presence of Turbulent Disturbances

SUBMITTED: February 22, 1960

Card 4/4

S/109/61/006/004/002/025
E140/E163

6,9460

AUTHORS: Kul'man, N.K., and Landa, P.S.

TITLE: Analogue-model investigation of certain optimal filters for random duration pulse signals

PERIODICAL: Radiotekhnika i elektronika, Vol.6, No.4, 1961, pp. 506-513

TEXT: The article describes an analogue-model study of a non-linear filter for detecting random duration pulse signals on a background of white noise. To determine the efficiency of the non-linear filter, the results obtained were compared with the results of the Wiener-Kolmogorov linear filter. Both types of filter were modelled on the standard analogue computer МН-7 (MN-7). The following parameters of the systems were investigated: the mean number of false signals per unit time and mean relative number of undetected pulses, as functions of duration; the operation of the non-linear and linear optimal filters was investigated at various signal-noise ratios and for various signal parameters. The equations of the optimal non-linear and linear filters and the connection diagrams of the models are derived on the basis of

Card 1/2

22888
S/109/61/006/004/002/025
E140/E163

Analogue-model investigation ....

Markov chain theory. Since the analogue computer in question appears to be a low-frequency device, relay circuits are used extensively, including two random noise generators with bandwidths up to 15 cps (Ref.9: Yu.M. Romanovskiy, Pribory i tekhnika eksperimenta, 1958, 4, 98). The results of the analogue simulation and of theoretical calculations agree to the satisfaction of the authors. Acknowledgements are expressed to S.P. Strelkov and R.L. Stratonovich for interest in the work and valuable advice.
There are 5 figures, 2 tables and 9 references: 7 Soviet and 2 English.
ASSOCIATION: Fizicheskiy fakul'tet, Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova
(Physics Division of Moscow State University imeni M.V. Lomonosov)

SUBMITTED: April 22, 1960

Card 2/2

LANDA, P.S.

Electron losses in a synchrotron due to the quantum nature of the radiation. Zhur. eksp. i teor. fiz. 40 no.4:1119-1123 Ap '61. (MIRA 14:7)

1. Moskovskiy gosudarstvennyy universitet.
(Synchrotron) (Electrons)

34272
S/188/62/000/001/004/008
B125/B138

6.9200

AUTHORS: Landa, P. S., Stratonovich, R. L.

TITLE: Theory of fluctuation transitions of various systems from one steady state into another

PERIODICAL: Moscow. Universitet. Vestnik. Seriya III. Fizika., astronomiya, no. 1, 1962, 33-45

TEXT: The authors use an approximate method to calculate the probability of transition of complex quasi-conservative nonlinear oscillation systems from one state into another: a) for weakly nonlinear systems with many degrees of freedom, the processes in which approximate either to harmonic oscillations or to the sum of harmonic oscillations with widely differing frequencies; b) for strongly nonlinear systems of the type $\ddot{x} + \gamma\dot{x} + f(x) = F(t)$ with $\gamma \ll (df/dx)^{1/2}_{mean}$. In both cases a first-order differential equation with random right-hand part can be derived, which approximately describes the behavior of a quantity z, characterizing the oscillations in the system. The passage of this quantity through a

Card 1/5

Theory of fluctuation transitions of ...

equation $(1/2)N(z)d^2M/dz^2 + f(z)dM/dz + 1 = 0$ (8) for the mathematical expectation of the boundary being reached by the particle which is in position z at the initial moment. Hence, with sufficiently weak noise and with infinite integration limits we get the double value of

$$M(z) = \pi \left(\sqrt{|K(z_0)K(z_1)|}/N(z_0)\right) e^{\psi(z_0)-\psi(z_1)} \quad (13) \text{ or}$$

$$M(z) \approx \int_{z_1}^{z_1} \frac{2}{N(z')} e^{\psi(z')}\, dz' \int_{z}^{z_1} e^{-\psi(z')}\, dz'. \quad (11).$$

Then $\omega(z,t) = e^{-k_0 t}\omega_0(z)$ can be determined from

(16)

$$\frac{dp_l}{dt} = -k_l p_l(t);$$

$$k_l w_l(z) = \frac{d}{dz}\left[f(z)\, w_l(z)\right] - \frac{d^2}{dz^2}\left\{\frac{N(z)}{2} w_l(z)\right\}. \quad (17).$$

Card 3/5

Theory of fluctuation transitions of ...

If all motions in the system can be regarded as harmonic oscillations with slowly varying amplitude (or as a sum of harmonic oscillations with frequencies sufficiently different from each other) the equation following from the nonlinear differential equation $y^n = F(y,y',\ldots,y^{(n-1)},t) + \xi(t)$ (23) has the solution $y = a\,e^{jpt}$, a is a function varying slowly with time. After some calculations

$$M = \frac{\sqrt{2\pi K(\tau_1)}}{2a_1\delta(0)} \exp\left\{2\int_0^{a_1} \frac{a\delta(a)}{N(a)}\,da\right\}. \qquad (32)$$

is obtained. If the energy losses per period due to attenuation are smaller than the oscillation energy of the nonlinear system $\ddot{x} + \beta\dot{x} + f(x) = \xi(t)$, (37) is obtained after some calculations. The transition probability is mainly determined by the height of the potential barrier which must be overcome in the transition from one state to the other. There are 10 references, 8 Soviet, and 2 non-Soviet. The two

Card 4/5

LANDA, P.S. (Moskva); STRELKOV, S.P. (Moskva)

Wing flutter caused by nonlinear aerodynamic forces. Izv.AN SSSR.Otd. tekh.nauk.Mekh.i mashinostr. no.5:111-117 S-O '62. (MIRA 15:10)
(Flutter (Aerodynamics))

S/109/62/007/008/002/015
D409/D301

6.9400

AUTHORS: Akopyan, I.G. and Landa, P.S.

TITLE: Overtone synchronization of self-oscillations in the presence of noises

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 8, 1962, 1285-1293

TEXT: A Thomson-type self-oscillating system is considered. The system is under the influence of a harmonic external force whose frequency is almost double the frequency of the free oscillations, and of a noise whose spectral density is concentrated in the frequency range of the synchronizing signal. Assuming that the correlation time $\tau_{cor}$ of the random noise $\xi(t)$ is small, it is possible to consider the amplitude and phase of the oscillations as Markov processes and to describe them by Einstein-Fokker type equations. Only stationary solutions of these equations are considered. From the solutions it is evident that the amplitude distribution in the case of overtone synchronization differs substantially from that of funda-

Card 1/3

Overtone synchronization ...

mental-frequency synchronization, whereas the phase distribution does not differ. Formulas are derived for the amplitude- and phase dispersions of the output signal. Conclusions: An oscillator, synchronized with a harmonic external force, whose frequency is double that of the oscillator, behaves like a narrow-band nonlinear filter. The phase fluctuations at the oscillator output do not depend on the form of the nonlinear filter-characteristic, but are entirely determined by the signal-to-noise ratio $D_s$ at the input, and by the magnitude of mistuning. The magnitude of the phase fluctuations in the case under consideration coincides with that in an oscillator, synchronized with the fundamental frequency. Hence, in this respect, resonance of the second kind does not offer any advantage. On the other hand, overtone-synchronization is advantageous with respect to reducing the amplitude fluctuations. These fluctuations depend on the form of the nonlinear characteristic. From the graphs and the formulas given, it is evident that the amplitude dispersion about its mean value is considerably smaller than in the case of fundamental-frequency synchronization; in the particular case of optimum excitation, the difference is of the order $D_c \gg 1$. Thus, it is con-

Card 2/3

Overtone synchronization ...

venient to use synchronized oscillators, in receivers with amplitude limiting, as narrow-band nonlinear filter-limiters. The above results are also of interest in estimating the fluctuations in frequency-divider circuits. There are 2 figures.

ASSOCIATION: Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova (Physics Division of Moscow State University im. M.V. Lomonosov)

SUBMITTED: November 29, 1961

Card 3/3